

# *The Relationships Among Leadership Styles, Entrepreneurial Orientation, and Business Performance*

Chung-Wen Yang

This study aims to contribute to the knowledge of leadership styles and entrepreneurial orientation at small and medium enterprises as well as their effects on business performance. This study examines how leadership style can affect the development and implementation of entrepreneurial orientation in small and medium enterprises in Taiwan. It is also designed to examine the effects of leadership styles and entrepreneurial orientation on business performance. Significant conclusions from this study are that different leadership styles may affect business performance; that transformational leadership is significantly more correlated to the business performance than is transactional leadership and passive-avoidant leadership; that entrepreneurial orientation is positively related to performance; and that transformational leadership with higher entrepreneurial orientation can contribute to higher business performance.

*Key Words:* leadership styles, entrepreneurial orientation, business performance

*JEL Classification:* M10

## **Introduction**

An effective leader influences followers in a desired manner to achieve desired goals. Different leadership styles may affect organizational effectiveness or performance (Nahavandi 2002); Entrepreneurs have become the heroes of economic development and contemporary enterprises (Sathe 2003). Entrepreneurial orientation is a commonly used measure in the literature (Morris and Kuratko 2002). This concept is the presence of organizational-level entrepreneurship (Wiklund and Shepherd 2005).

Some researchers have tried to combine the two concepts into entrepreneurial leadership to explore both leadership and entrepreneurship behavior (Gupta et al. 2004; Tarabishy et al. 2005). They have tried

*Dr Chung-Wen Yang is an Assistant Professor at the Department of Business Administration, Cheng Shiu University, Taiwan.*

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to combine entrepreneurship with leadership into a new form of leadership called entrepreneurial leadership. This new leadership model has been used to show both entrepreneurship and leadership behavior (Tarabishy et al. 2005). In the dynamic, complex, and uncertain competitive environment, a type of entrepreneurial leader who is distinct from the behavioral form of leaders is needed (Cohen 2004).

This study was designed to examine how leadership styles can affect the development and implementation of entrepreneurial orientation in Small and medium enterprises (SMEs) in Taiwan. SMEs exert a strong influence on the economies of Taiwan. It also examines the effects of entrepreneurial orientation and leadership styles on business performance. The findings could contribute new knowledge in the fields of leadership and entrepreneurship, especially entrepreneurial leadership

## **Literature Review and Hypothesis Development**

### LEADERSHIP STYLES AND BUSINESS PERFORMANCE

Leadership style is the 'relatively consistent pattern of behavior that characterizes a leader' (DuBrin 2001, 121). Today's organizations need effective leaders who understand the complexities of the rapidly changing global environment. Different leadership styles may affect organizational effectiveness or performance (Nahavandi 2002). This study focuses on three different leadership styles: transformational leadership, transactional leadership, and passive-avoidant leadership measured through the Multifactor Leadership Questionnaire (MLQ; Bass and Avolio 1995). The concepts of transformational and transactional leadership have been considerable interest in the leadership literature over the past several years (Avolio and Bass 2004).

Transformational and transactional leadership are not viewed as opposing leadership styles. Leaders can be both transformational and transactional (Lowe et al. 1996). In general, transformational leadership is more effective than transactional leadership (Gardner and Stough 2002). Some researchers have found data supporting the conclusion that transformational leadership is superior to transactional leadership (Bass et al. 2003; Dvir et al. 2002). Transformational leadership is more strongly correlated than transactional leadership with higher productivity and performance (Lowe et al. 1996), higher level of organizational culture (Block 2003), and higher level of emotional intelligence (Gardner and Stough 2002). Therefore, the researcher hypothesizes:

- H1 *Can the top-level managers' leadership styles (transformational leadership, transactional leadership, and passive-avoidant leadership) predict higher business performance?*

ENTREPRENEURIAL ORIENTATION AND BUSINESS  
PERFORMANCE

Entrepreneurial orientation is a commonly used measure in entrepreneurship literature. Entrepreneurial orientation is the presence of organizational-level entrepreneurship (Wiklund and Shepherd 2005). Several researchers have agreed that entrepreneurial orientation could be explained by innovation, proactiveness, and risk taking (Wiklund 1999). A large proportion of entrepreneurship studies assume entrepreneurial orientation to be a unitary concept (Covin and Slevin 1989; Dess et al. 1997; Wiklund 1999). The notion of a single factor entrepreneurial orientation concept also has been examined in some studies. Because the three dimensions of entrepreneurial orientation can vary independently of one another (Krauss et al. 2005; Kreiser et al. 2002; Lumpkin and Dess 1996; Lyon et al. 2000; Venkatraman 1989), this study included a comparison of the dimensions of entrepreneurial orientation and total entrepreneurial orientation with other variables.

The assumption of entrepreneurial orientation is that entrepreneurial businesses differ from other types of businesses. Successful corporate entrepreneurship must have an entrepreneurial orientation (Covin and Slevin 1989; Wiklund 1999; Wiklund and Shepherd 2003). This study compared three dimensions of the entrepreneurial orientation and the total entrepreneurial orientation with business performance. Hence, the researcher hypothesizes:

- H2 *Can the entrepreneurial orientation (innovation, proactiveness, and risk-taking) of SMEs in Taiwan predict the business performance?*

LEADERSHIP STYLES AND ENTREPRENEURIAL ORIENTATION

The study tried to combine these two concepts: leadership and entrepreneurship. The aim was to examine how leadership can affect the development and implementation of entrepreneurial orientation in SMEs in Taiwan. Entrepreneurial leadership is an effective and needed leadership style (Cohen 2004; Fernald, Solomon, and Tarabishy 2005; Tarabishy et al. 2005). Entrepreneurial leadership was coined by those who realized that a change in leadership style was necessary. Entrepreneurial leaders play a critical role in the success of new business ven-

tures. Wah (2004) suggested that future leadership research use more quantitative approaches to survey Chinese entrepreneurial leaders. Entrepreneurial leadership is understandable because of the uncharted and unprecedented territory that lies ahead for businesses in today's dynamic markets (Tarabishy et al. 2005). Thornberry (2006) stated that 'entrepreneurial leadership is more like transformational leadership than it is like transactional leadership, yet it differs in some fundamental ways' (p. 24). The study also examines the effects of entrepreneurial orientation and leadership styles on business performance. Given this view the researcher hypothesizes:

- H3 *Can the top-level managers' leadership styles (transformational leadership, transactional leadership, and passive-avoidant leadership) and entrepreneurial orientation of SMEs (innovation, proactiveness, and risk-taking) predict higher business performance?*

## **Methodology**

### RESEARCH DESIGN

This study used a quantitative research method to examine the relationship among leadership styles, the entrepreneurial orientation, and business performance of SMEs in Taiwan; a sample of top-level managers from SMEs in Taiwan was used. SMEs represent a major part of most modern economies. According to the White Paper on Small and Medium Enterprises in Taiwan (Ministry of Economic Affairs 2006), SMEs account for 97.8% of all businesses in Taiwan. This study focused on SMEs to control for organizational size. The population for the study was based on the CD-ROM version of the 2006 *Directories of Corporations* (China Credit Information Service 2006). The CCIS is the leading business information agency in Taiwan, and its 2006 directories provide basic background information for 20,302 enterprises in Taiwan. Surveys were addressed to top-level managers, who were identified as the CEOs, owners, founders, managers, presidents, or heads of SMEs. Top-level managers were targeted because they are the most informed about the business' overall operational activities.

### INSTRUMENTATION

Three survey instruments were used. The first was the Multifactor Leadership Questionnaire (MLQ), which was used to measure top-level managers' leadership style (transformational, transactional, and passive-

avoidant). The MLQ is one of the most widely used instruments to measure transformational and transactional leadership behaviors (Avolio and Bass 2004). The MLQ Leader 5x short form consists of 45 items that measure aspects of transformational leadership (attributed charisma, idealized influence, inspirational motivation, individualized stimulation, and intellectual consideration), transactional leadership (contingent reward and management-by-exception: active), and passive-avoidant leadership (management-by-exception: passive and *laissez-faire* leadership) on a 5-point scale.

The second assessment tool was the Entrepreneurial Orientation Questionnaire (EOQ), the most widely utilized instrument for measuring entrepreneurial orientation. It was developed by Covin and Slevin (1989), based on the earlier study of Khandwalla (1976/1977) and Miller and Friesen (1982). The EOQ, which contains nine items and uses a 7-point scale, measures three dimensions of entrepreneurial orientation (innovation, proactiveness, and risk-taking). It is used to assess three components of entrepreneurial orientation, with three items measuring innovation, three items measuring proactiveness, and three items measuring risk-taking.

The third assessment tool was a business performance scale developed by the researcher according to the suggestions of previous studies. Business performance is a multidimensional construct (Wiklund and Shepherd 2005). Previous studies have often used self-reports to gather business performance data, and these results have proven to be reliable (Knight 2000). Wiklund (1999) suggested that performance measures should include both growth and financial performance. Furthermore, public information is unreliable because most SMEs are privately held and have no legal obligation to disclose information. Respondents may be reluctant to provide actual financial data (Tse et al. 2004). Hence, this study used subjective, self-reported measures of business performance including growth and financial performance. The business performance scale was developed by the research according to suggestions of previous studies. The scale contains eight items and uses a 7-point Likert-type scale. Four indicators of growth were utilized: sales growth, employment growth, sales growth compared to competitors, and market share growth compared to competitors. The three financial performance indicators were gross profit, return on assets (ROA), and return on investment (ROI). In addition, the researcher used an indicator of 'overall performance/success' to business performance (Lumpkin and Dess 1996).

#### SAMPLING

A sample should be large enough to provide a credible result. Gay and Airasian (2003) said that, when the population size is about 5,000 or more, a sample size of 400 should be adequate (p. 113). Furthermore, because the similar studies in Taiwan reported a low response rate for mailed surveys, the researcher randomly selected 3,000 top-level managers of SMEs in Taiwan through the 2006 Directories of Corporations (CD version; China Credit Information Service 2006). Questionnaires were delivered to 3,000 top-level managers via post service. Of these, 449 questionnaires were returned, but 26 surveys were not usable because they were incomplete.

The 423 usable surveys were examined for accuracy of data entry, non-response bias, missing values, reliability, and validity. None of the nine variables – transformational leadership, transactional leadership, passive-avoidant leadership, outcomes of leadership, innovation, proactiveness, risk-taking, total entrepreneurial orientation, and total business performance – violated the assumption of normality. Finally, 17 surveys were deleted due to outliers, so 406 surveys without missing data remained for analysis.

#### Data Analysis

The Statistical Package for the Social Sciences (SPSS 13.0) computer program for Windows was used to conduct the statistical analysis of all data in this study. The Cronbach' alpha coefficients of the MLQ ranged from .79 to .90. The Cronbach' alpha coefficients of the EOQ ranged from .78 to .84; the overall Cronbach' alpha coefficient of the EOQ was .87. The Cronbach' alpha coefficient of the business performance was .91. All the coefficients were greater than .70, exceeding the recommended minimum level of .7 (Nunnally 1978). This ensured that these three scales had a very satisfactory degree of reliability. The results concerning evidence of reliability were consistent with previous studies involving two of the instruments used in this study: the Multifactor Leadership Questionnaire (MLQ; Bass and Avolio 1995) and the Entrepreneurial Orientation Questionnaire (EOQ; Covin and Slevin 1989). The business performance scale also showed high reliability and inter-item correlations.

#### LEADERSHIP STYLES AND BUSINESS PERFORMANCE

A Pearson product-moment correlation coefficient was used to examine the relationship between the leadership styles and the business per-

TABLE 1 Intercorrelations for leadership styles and business performance ( $N = 418$ )

Measure	TF	TA	PA
Business Performance	.25***	.13**	-.10*

NOTES TF = transformational leadership, TA = transactional leadership, PA = passive-avoidant leadership; \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ .

formance of SMEs in Taiwan. Transformational leadership was significantly positively correlated with total business performance ( $r = .25, p < .001$ ). There was a small, positive correlation between transformational leadership and business performance. Transactional leadership was significantly positively correlated with total business performance ( $r = .13, p = .009$ ). There was a small, positive correlation with total business performance ( $r = .13, p = .009$ ). There was also a small, positive correlation between transactional leadership and business performance. Passive-avoidant leadership was significantly negatively correlated with business performance ( $r = -.10, p = .036$ ). There was a small, negative correlation between passive-avoidant leadership and business performance. As shown in table 1, transformational leadership had a stronger relationship with business performance than did transactional leadership, both with small and positive correlations. Passive-avoidant leadership had a very small, negative correlation.

LEADERSHIP STYLES TO BUSINESS PERFORMANCE

A standard multiple regression was performed with business performance as the dependent variable, and scores on the MLQ (transformational leadership, transactional leadership, and passive-avoidant leadership) as independent variables. An analysis for evaluation of assumptions was performed to reduce the number of outliers and improve the normality, linearity, and homoscedasticity of residuals. With the use of  $p < .001$  criterion for Mahalanobis distance, no multivariate outliers were found in the sample ( $N = 406$ ). No cases had missing data and no suppressor variables were found. A residual analysis was conducted to check assumptions. To check the scatterplot of the standardized residuals and the normal probability plot, assumptions about residuals were met.

Table 2 shows the correlations between the variables, unstandardized regression coefficients ( $B$ ), and the standardized regression coefficients ( $\beta$ ). This regression model was significantly different from zero,  $F(3,402) = 9.85$  and  $p < .001$ . The regression coefficient of transformational leadership was different from zero, and 95% confidence limits were .28 to .79.

TABLE 2 Regression analysis summary for the top-level managers' leadership styles predicting business performance

Variable	<i>B</i>	<i>SEB</i>	$\beta$
Transformational leadership	.53	.13	.26***
Transactional leadership	-.06	.13	-.03
Passive-avoidant leadership	-.14	.08	-.09

NOTES  $R^2 = .07$ , adjusted  $R^2 = .06$  ( $N = 406$ ,  $p < .001$ ), \*\*\*  $p < .001$ .

Only one independent variable contributed significantly to prediction of business performance, transformational leadership:  $p < .001$ ,  $sr^2 = .04$ .

Altogether, 6% (adjusted  $R^2$ ) of the variability in business performance was predicted by MLQ scores on these three independent variables. Transactional leadership and passive-avoidant leadership were not good predictors of the business performance. The transformational leadership of top-level managers contributed the most to the business performance of SMES.

#### LEADERSHIP STYLES TO BUSINESS PERFORMANCE: DISCRIMINANT FUNCTION ANALYSIS

The researcher divided business performance into two categories by its mean ( $M = 4.32$ ): higher business performance and lower business performance. A direct discriminant function analysis was performed using three MLQ variables (transformational leadership, transactional leadership, and passive-avoidant leadership) as predictors of membership in the two groups (higher business performance and lower business performance). No cases were identified as multivariate outliers with  $p < .001$ . An analysis for evaluation of assumptions of linearity, normality, multicollinearity, and homogeneity of variance-covariance matrices did not violate multivariate analysis.

A discriminant function analysis indicated a strong association between groups and predictors,  $\chi^2(3) = 14.91$  and  $p = .002$ . Table 3 presents the correlation of predictor variables with discriminant functions, which suggested that the good predictors for distinguishing between higher business performance and lower business performance were transformational leadership and transactional leadership.

SMES with higher business performance had higher scores on transformational leadership ( $M = 3.10$ ,  $SD = .45$ ) than on transactional leadership ( $M = 2.72$ ,  $SD = .49$ ) or passive-avoidant leadership ( $M = 1.33$ ,  $SD$



TABLE 3 Correlation of predictor variables from the MLQ with discriminant functions (function structure matrix) and standardized discriminant function coefficients

Predictor variable	Correlation with discriminant functions	Standardized discriminant function coefficients
	Function 1	Function 1
Transformational	.96	1.10
Transactional	.46	-.23
Passive-avoidant	-.27	-.20

TABLE 4 Means and standard deviations of predictor variables from the MLQ as a function of business performance ( $N = 406$ )

Predictor variable	Lower business perf.		Higher business perf.	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Transformational Leadership	2.91	.51	3.10	.45
Transactional Leadership	2.63	.52	2.72	.49
Passive-avoidant Leadership	1.40	.63	1.33	.62

= .62). SMEs with lower business performance also had higher scores on transformational leadership ( $M = 2.91, SD = .51$ ) than on transactional leadership ( $M = 2.63, SD = .52$ ) or passive-avoidant leadership ( $M = 1.40, SD = .63$ ). Table 4 presents the results.

Higher business performance differs from lower business performance on transformational leadership,  $F(1,404) = 14.01$  and  $p < .001$ . The group of higher business performance did not differ from the group of lower business performance on transactional leadership,  $F(1,404) = 3.24$  and  $p = .07$ , or passive-avoidant leadership,  $F(1,404) = 1.14$  and  $p = .29$ . Among the three different leadership styles, transformational leadership (Wilks'  $\lambda = .96$ ) was the best predictor of higher business performance. Table 5 presents the predictor variables.

TABLE 5 Predictor variables from the MLQ in stepwise discriminant function analysis

Predictor variable	Wilks' $\lambda$	Equivalent $F(1,404)$
Transformational leadership	.96	14.01***
Transactional leadership	.99	3.24
Passive-avoidant leadership	.99	1.14

NOTES \*  $p < .05$ , \*\*\*  $p < .001$ .

TABLE 6 Classification analysis for business performance

Actual group membership	N	Predicted group membership			
		Lower bus. perf.		Higher bus. perf.	
		n	%	n	%
Lower Business Performance	200	105	52.5	95	47.5
Higher Business Performance	206	88	42.7	118	57.3

NOTES Overall percentage of correctly classified cases (54.9%).

TABLE 7 Intercorrelations for dimensions of entrepreneurial orientation and measure of business performance ( $N = 406$ )

Measure	Innovation	Proactiveness	Risk-taking	Total EO
Business Performance	.32***	.33***	.26***	.37***

NOTES EO = Entrepreneurial orientation, \*\*\*  $p < .001$ .

Table 6 shows the classification analysis for the business performance; 54.9% of cases were classified correctly. The group with higher business performance was more likely to be correctly classified (57.3% correct classifications) than the group with lower business performance (52.5% correct classifications).

#### ENTREPRENEURIAL ORIENTATION AND BUSINESS PERFORMANCE

A Pearson product-moment correlation coefficient was calculated to examine the relationship between entrepreneurial orientation and business performance of SMEs in Taiwan. Table 7 shows the intercorrelations for dimensions of entrepreneurial orientation and business performance.

Innovation was significantly positively correlated with business performance ( $r = .32, p < .001$ ). There was a medium, positive correlation between innovation and the business performance. Proactiveness was significantly positively correlated with business performance ( $r = .33, p < .001$ ). There was a medium, positive correlation between proactiveness and business performance. Risk-taking was significantly positively correlated with business performance ( $r = .26, p < .001$ ). There was a small, positive correlation between risk-taking and business performance. Total entrepreneurial orientation was significantly positively correlated with business performance ( $r = .37, p < .001$ ). There was a medium, positive correlation between total entrepreneurial orientation and business performance.

TABLE 8 Regression analysis summary for scores on EO of SMES in Taiwan predicting business performance variable

Variable	<i>B</i>	<i>SEB</i>	$\beta$
EO-innovation	.14	.05	.18**
EO-proactiveness	.17	.05	.20**
EO-risk-taking	.06	.04	.08

NOTES  $R^2 = .146$ , adjusted  $R^2 = .14$  ( $N = 404$ ,  $p < .001$ ); \*\*\*  $p < .001$ , \*\*  $p < .01$ .

ENTREPRENEURIAL ORIENTATION TO BUSINESS PERFORMANCE

A standard multiple regression was performed with business performance as the dependent variable and scores on entrepreneurial orientation as the independent variables. An analysis for evaluation of assumptions was performed to reduce the number of outliers and improve the normality, linearity, and homoscedasticity of residuals. With the use of  $p < .001$  criterion for Mahalanobis distance, two multivariate outliers were found. After deleting these outliers, 404 cases without missing data continued to be analyzed. A residual analysis was conducted to check assumptions. To check the scatterplot of the standardized residuals and the normal probability plot, assumptions about residuals were met.

Table 8 presents the correlations between the variables, unstandardized regression coefficients (*B*), and standardized regression coefficients ( $\beta$ ). This regression model was significantly different from zero,  $F(3,400) = 22.81$ ,  $p < .001$ .

For the two regression coefficients that differed significantly from zero, 95% confidence limits were calculated. The confidence limits for innovation were .05 to .22; for proactiveness, they were .07 to .28. Two of the independent variables contributed significantly to prediction of business performance, innovation ( $sr^2 = .02$ ) and proactiveness ( $sr^2 = .02$ ). Altogether, 14% (adjusted  $R^2$ ) of the variability in business performance was predicted by entrepreneurial orientation scores on these three independent variables. Risk-taking was not a good predictor of business performance.

LEADERSHIP STYLES AND ENTREPRENEURIAL ORIENTATION

The relationship between the top-level managers' leadership styles and the entrepreneurial orientation of SMES in Taiwan was examined using Pearson product-moment correlation coefficient. Transformational leadership was significantly positively correlated with innovation ( $r =$

TABLE 9 Intercorrelations for leadership styles and the EOQ measures ( $N = 406$ )

Measure	TF	TA	PA
EO-innovation	.22***	.13*	.03
EO-proactiveness	.23***	.09	-.03
EO-risk-taking	.14**	.05	.05
Total entrepreneurial orientation	.24***	.11*	.02

NOTES TF = transformational leadership, TA = transactional leadership, PA = passive-avoidant leadership; \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ .

.22,  $p < .001$ ), proactiveness ( $r = .23$ ,  $p < .001$ ), risk-taking ( $r = .14$ ,  $p = .004$ ), and total entrepreneurial orientation ( $r = .24$ ,  $p < .001$ ). There was a small, positive correlation between transformational leadership and all dimensions of entrepreneurial orientation. Transactional leadership was significantly positively correlated with innovation ( $r = .13$ ,  $p = .01$ ) and total entrepreneurial orientation ( $r = .11$ ,  $p = .029$ ). There was a small, positive correlation between transactional leadership and innovation or total entrepreneurial orientation. There were no significant relationships between passive-avoidant leadership and entrepreneurial orientation. As shown in table 9, transformational leadership had a stronger relationship on total entrepreneurial orientation than transactional leadership, but with a small and positive correlation.

#### LEADERSHIP STYLES TO ENTREPRENEURIAL ORIENTATION

A standard multiple regression was performed with the total entrepreneurial orientation as measured by the EOQ as the dependent variable and scores on the MLQ (transformational leadership, transactional leadership, passive-avoidant leadership) as the independent variables. An analysis for evaluation of assumptions was performed to reduce the number of outliers and improve the normality, linearity, and homoscedasticity of residuals. With the use of  $p < .001$  criterion for Mahalanobis distance, no multivariate outliers were found. No cases had missing data and no suppressor variables were found for the sample ( $N = 406$ ). A residual analysis was conducted to check assumptions. To check the scatterplot of the standardized residuals and normal probability plot, assumptions about residuals were met.

Table 10 indicates the correlations between the variables, unstandardized regression coefficients ( $B$ ), and standardized regression coefficients ( $\beta$ ). This regression model was significantly different from zero,  $F(3, 402)$

TABLE 10 Regression analysis summary for the top-level managers' leadership styles predicting the total entrepreneurial orientation

Variable	<i>B</i>	<i>SEB</i>	$\beta$
Transformational leadership	.62	.13	.30***
Transactional leadership	-.18	.13	-.09
Passive-avoidant leadership	.07	.08	.05

NOTES  $R^2 = .063$ , adjusted  $R^2 = .056$  ( $N = 406$ ,  $p < .001$ ). \*\*\*  $p < .001$ .

= 8.95 and  $p < .001$ . The regression coefficient of transformational leadership was different from zero, and 95% confidence limits were .36 to .88. Only transformational leadership contributed significantly to prediction of the total entrepreneurial orientation,  $p < .001$  and the semipartial correlations  $sr^2 = .05$ .

Altogether, 5.6% (adjusted  $R^2$ ) of the variability in the total entrepreneurial orientation was predicted by MLQ scores on these three independent variables. Transactional leadership and passive-avoidant leadership were not good predictors of the total entrepreneurial orientation. Hence, the transformational leadership of top-level managers contributed the most to the total entrepreneurial orientation of SMEs.

LEADERSHIP STYLES AND ENTREPRENEURIAL ORIENTATION TO BUSINESS PERFORMANCE: DISCRIMINANT FUNCTION ANALYSIS

The researcher divided business performance into two categories by its mean ( $M = 4.32$ ): higher business performance and lower business performance. A direct discriminant function analysis was performed using three variables of the MLQ and three variables of the EOQ as predictors of membership in the two groups. Predictors were transformational leadership, transactional leadership, passive-avoidant leadership, innovation, proactiveness, and risk-taking. The groups were higher business performance and lower business performance. Two cases were identified as multivariate outliers with  $p < .001$ . After deleting these cases, 404 cases remained for analysis. An analysis for evaluation of assumptions of linearity, normality, multi-collinearity, and homogeneity of variance-covariance matrices did not violate multivariate analysis.

A discriminant function indicated a strong association between groups and predictors,  $\chi^2(6) = 45.04$  and  $p < .001$ . Table 11 presents the correlation of predictor variables with discriminant functions, which suggested that the good predictors for distinguishing between higher business per-

TABLE 11 Correlation of predictor variables from MLQ and EOQ with discriminant functions (function structure matrix) and standardized discriminant function coefficients

Predictor variable	Correlation with	Standardized discriminant
	discriminant functions	function coefficients
	Function 1	Function 1
Transformational leadership	.54	.41
Transactional leadership	.26	-.08
Passive-avoidant leadership	-.13	-.13
Innovation	.84	.55
Proactiveness	.76	.27
Risk-taking	.59	.20

TABLE 12 Means and standard deviations of predictor variables from MLQ and EOQ as a function of business performance

Predictor variable	Lower business perf.		Higher business perf.	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Transformational Leadership	2.92	0.52	3.01	0.49
Transactional Leadership	2.63	0.52	2.68	0.51
Passive-avoidant Leadership	1.40	0.63	1.37	0.62
Innovation	4.41	1.27	4.77	1.27
Proactiveness	4.26	1.15	4.56	1.17
Risk-taking	3.68	1.26	3.95	1.30

formance and lower business performance were transformational leadership, innovation, proactiveness, and risk-taking.

Table 12 shows the innovation,  $F(1,402) = 33.68$  and  $p < .001$ ; the proactiveness,  $F(1,402) = 27.40$  and  $p < .001$ ; and the risk-taking,  $F(1,402) = 16.62$  and  $p < .001$ . Innovation was the best predictor of group membership (Wilks's  $\alpha = .923$ ). As shown in table 13, higher business performance differs from lower business performance on four variables: transformational leadership,  $F(1,402) = 13.86$  and  $p < .001$ ; innovation,  $F(1,402) = 33.68$  and  $p < .001$ ; proactiveness,  $F(1,402) = 27.40$  and  $p < .001$ ; and risk-taking,  $F(1,402) = 16.62$  and  $p < .001$ . Innovation was the best predictor of group membership (Wilks'  $\alpha = .923$ ).

Table 14 reports the classification analysis for business performance; 63.4% cases were classified correctly. The group with higher business performance was more likely to be correctly classified (65.4% correct classifi-

TABLE 13 Predictor variables from MLQ and EOQ in stepwise discriminant function analysis

Predictor variable	Wilks' $\lambda$	Equivalent $F(1,402)$
Transformational leadership	.967	13.86***
Transactional leadership	.992	3.21
Passive-avoidant leadership	.998	0.84
Innovation	.923	33.68***
Proactiveness	.936	27.40***
Risk-taking	.960	16.62***

NOTES \*\*\*  $p < .001$ .

TABLE 14 Classification analysis for business performance

Actual group membership	Predicted group membership				
	N	Lower bus. perf.		Higher bus. perf.	
		n	%	n	%
Lower business performance	199	122	61.3	77	38.7
Higher business performance	205	71	34.6	134	65.4

NOTES Overall percentage of correctly classified cases (63.4%).

cations) than the group with lower business performance (61.3% correct classifications).

### Conclusion

In a comparison of three different leadership styles ( $N = 406$ ), the mean for transformational leadership ( $M = 3.00$ ) is higher than the mean for transactional leadership ( $M = 2.68$ ) and for passive-avoidant leadership ( $M = 1.37$ ). The results are similar to the results of a study ( $N = 27,285$ ) by Avolio and Bass (2004) in which the mean for transformational leadership ( $M = 2.85$ ) was higher than the mean for transactional leadership ( $M = 2.27$ ) and for passive-avoidant leadership ( $M = .84$ ). Furthermore, a comparison of the three dimensions of entrepreneurial orientation ( $N = 406$ ) shows that the mean for innovation ( $M = 4.77$ ) is higher than the mean for proactiveness ( $M = 4.56$ ) and for risk-taking ( $M = 3.95$ ). Total entrepreneurial orientation has a mean of 4.43 and a standard deviation of 1.02. These results are similar to those of Covin and Slevin (1989); in their results, the scale had a mean of 4.33 and a standard deviation of 1.23. In another study, Covin et al. (2006) found that the scale had a mean of 4.05 and a standard deviation of 1.08.

The study confirmed the results of Covin and Slevin (1989) who found that entrepreneurial orientation was positively related to performance. Consistent with much of the literature reviewed (Smart and Conan 1994; Wiklund and Shepherd 2005; Zahra and Covin 1995), the findings from the current study suggest that high levels of total entrepreneurial orientation may contribute positively to business performance. A comparison of the three dimensions of entrepreneurial orientation shows that high levels of innovation and proactiveness may contribute positively to business performance. The attributes that appear to contribute to high business performance are innovation and proactiveness. Risk-taking is not a significant contributor to predicting business performance, but it is significantly positively correlated with business performance in this study. Although risk-taking is considered an attribute of entrepreneurship, successful entrepreneurs are not gamblers (Kuratko and Hodgetts 2001). Indeed, Drucker (1985) argued that successful entrepreneurs are typically not risk takers. Entrepreneurs usually take carefully calculated risks and avoid taking unnecessary ones (Begley and Boyd 1987). The relationship between risk-taking and business performance is likely to be affected by other influences such as environmental factors (Krauss et al. 2005; Kreiser et al. 2002).

Different leadership styles may affect performance. Transformational leadership is significantly more correlated to the business performance than transactional leadership and passive-avoidant leadership. Among the three different leadership styles, transformational leadership is the best predictor of the business performance. This study supports the position of Gardner and Stough (2002) that transformational leadership is more effective than transactional leadership. Transformational leadership is more strongly correlated than transactional leadership with higher productivity and performance (Bass et al. 2003; Lowe et al. 1996). Eggers and Leahy (1995) reported that both management and leadership skills such as financial management, communication, motivation of others, vision, and self-motivation play important roles in determining the growth rate of a small business. The results of this study confirmed these findings because key aspects of transformational leadership include idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration (Avolio and Bass 2004). Finally, transformational leadership with higher entrepreneurial orientation can contribute to higher business performance. This study supports the idea of entrepreneurial leadership, which is viewed to be more transforma-



tional than transactional in nature but with some fundamental differences (Thornberry 2006).

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